09821030.070604

FIG.1

PRIOR ART

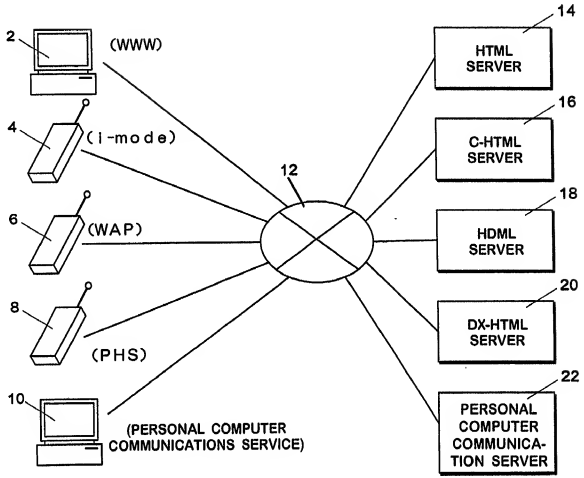

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FIG.2a

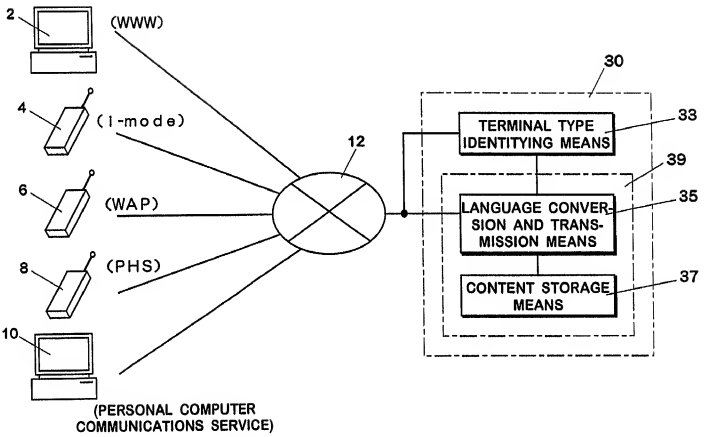

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FIG.2b

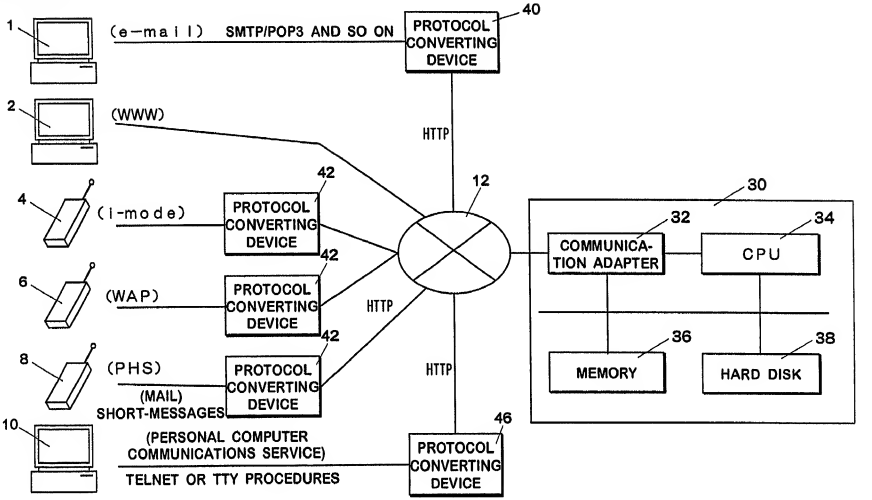

FIG.3

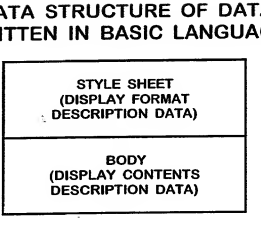

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FIG.4

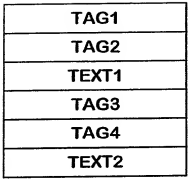

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FIG.5

FIG.6

BODY

```
<KSP KEY=K1 NAME="KSP SAMPLE">
<P KEY=R1> SELECT THE MENU</P>
<IMG KEY=R2 SRC=ICOM.JPG>
<A KEY=R3 HREF=MAIL.KSP> E-MAIL</A>
<A KEY=R4 HREF=BBS.KSP> BBS</A>
</KSP>
```

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FIG.7

STYLE SHEET

```
<HTML>
<HEAD><TITLE>$K1.NAME$</TITLE></HEAD>
<BODY BACKGROUND=bg.gif>
$R1$<BR>
<IMG SRC=$R2.SRC$>
<A HREF=$R3.HREF$>$R3</A>
<A HREF=$R4.HREF$>$R4</A>
</BODY>
</HTML>
```

FIG.8

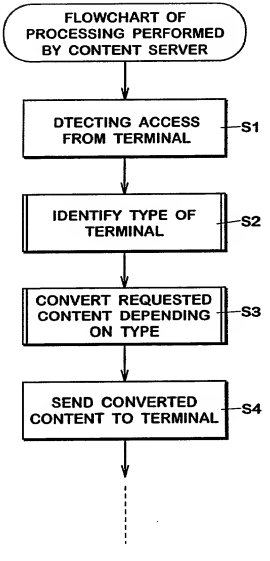
FLOWCHART OF PROCESSING PERFORMED BY CONTENT SERVER
DTECTING ACCESS FROM TERMINAL
S1
IDENTIFY TYPE OF TERMINAL
S2
CONVERT REQUESTED CONTENT DEPENDING ON TYPE
S3
SEND CONVERTED CONTENT TO TERMINAL
S4

FIG.9

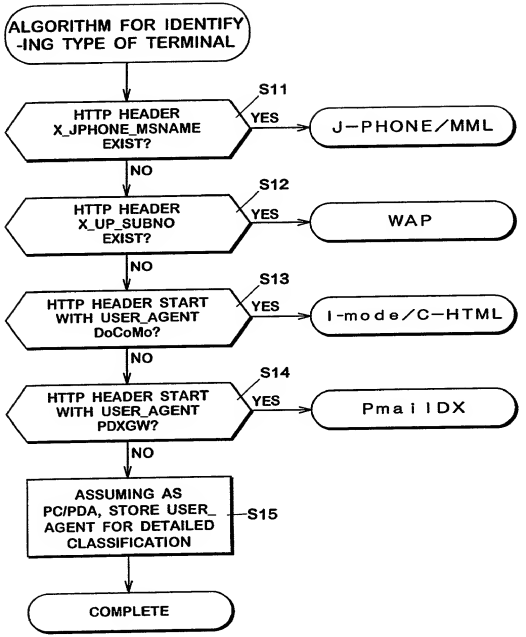
ALGORITHM FOR IDENTIFY -ING TYPE OF TERMINAL
S11
HTTP HEADER X_JPHONE_MSNAME EXIST?
YES
J-PHONE/MML
NO
S12
HTTP HEADER X_UP_SUBNO EXIST?
YES
WAP
NO
S13
HTTP HEADER START WITH USER_AGENT DoCoMo?
YES
I-mode/C-HTML
NO
S14
HTTP HEADER START WITH USER_AGENT PDXGW?
YES
PmaiIDX
NO
ASSUMING AS PC/PDA, STORE USER_ AGENT FOR DETAILED CLASSIFICATION
S15
COMPLETE

FIG.10

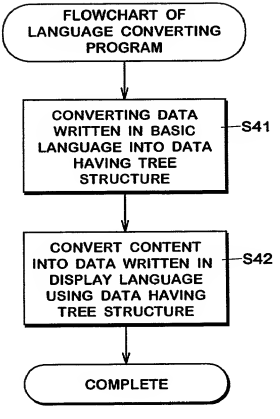
FLOWCHART OF LANGUAGE CONVERTING PROGRAM
CONVERTING DATA WRITTEN IN BASIC LANGUAGE INTO DATA HAVING TREE STRUCTURE
S41
CONVERT CONTENT INTO DATA WRITTEN IN DISPLAY LANGUAGE USING DATA HAVING TREE STRUCTURE
S42
COMPLETE

FIG.11

TAG NUMBER	
TAG TYPE	
NUMBER OF ATTRIBUTES	
ATTRIBUTE NAME-1	ATTRIBUTE VALUE-1
ATTRIBUTE NAME-2	ATTRIBUTE VALUE-2
ATTRIBUTE NAME-3	ATTRIBUTE VALUE-3
. . .	. . .
TEXT (ONLY A-TAG, P-TAG)	
SUBSEQUENT TAG NUMBER	
TAG NUMBER FOR CHILD TAG(ONLY KSP,FORM,SELECT TAG)	

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FIG.12

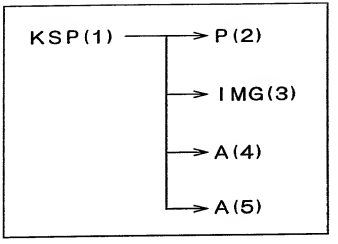

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FIG.13

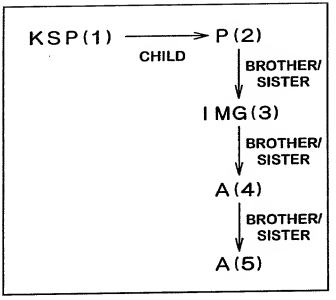

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FIG.14

TAG NUMBER	1
TAG TYPE	KSP
NUMBER OF ATTRIBUTES	2
ATTRIBUTE NAME-1	KEY
ATTRIBUTE VALUE-1	K1
ATTRIBUTE NAME-2	NAME
ATTRIBUTE VALUE-2	KSPSAMPLE
TEXT	(EMPTY)
SUBSEQUENT TAG NUMBER	0(NO CORRESPONDING TAG)
TAG NUMBER FOR CHILD TAG	2

TAG NUMBER	2
TAG TYPE	P
NUMBER OF ATTRIBUTES	1
ATTRIBUTE NAME-1	KEY
ATTRIBUTE VALUE-1	R1
TEXT	SELECT THE MENU
SUBSEQUENT TAG NUMBER	3
TAG NUMBER FOR CHILD TAG	0(NO CORRESPONDING TAG)

TAG NUMBER	3
TAG TYPE	IMG
NUMBER OF ATTRIBUTES	2
ATTRIBUTE NAME-1	KEY
ATTRIBUTE VALUE-1	R2
ATTRIBUTE NAME-2	SRC
ATTRIBUTE VALUE-2	ICON. JPG
TEXT	(NONE)
SUBSEQUENT TAG NUMBER	4
TAG NUMBER FOR CHILD TAG	0(NO CORRESPONDING TAG)

TAG NUMBER	4
TAG TYPE	A
NUMBER OF ATTRIBUTES	2
ATTRIBUTE NAME-1	KEY
ATTRIBUTE VALUE-1	R3
ATTRIBUTE NAME-2	HREF
ATTRIBUTE VALUE-2	MAIL. KSP
TEXT	MAIL
SUBSEQUENT TAG NUMBER	5
TAG NUMBER FOR CHILD TAG	0(NO CORRESPONDING TAG)

FIG.15

TAG NUMBER	5
TAG TYPE	A
NUMBER OF ATTRIBUTES	2
ATTRIBUTE NAME-1	KEY
ATTRIBUTE VALUE-1	R4
ATTRIBUTE NAME-2	HREF
ATTRIBUTE VALUE-2	BBS. KSP
TEXT	BBS
SUBSEQUENT TAG NUMBER	0(NO CORRESPONDING TAG)
TAG NUMBER FOR CHILD TAG	0(NO CORRESPONDING TAG)

FIG.16

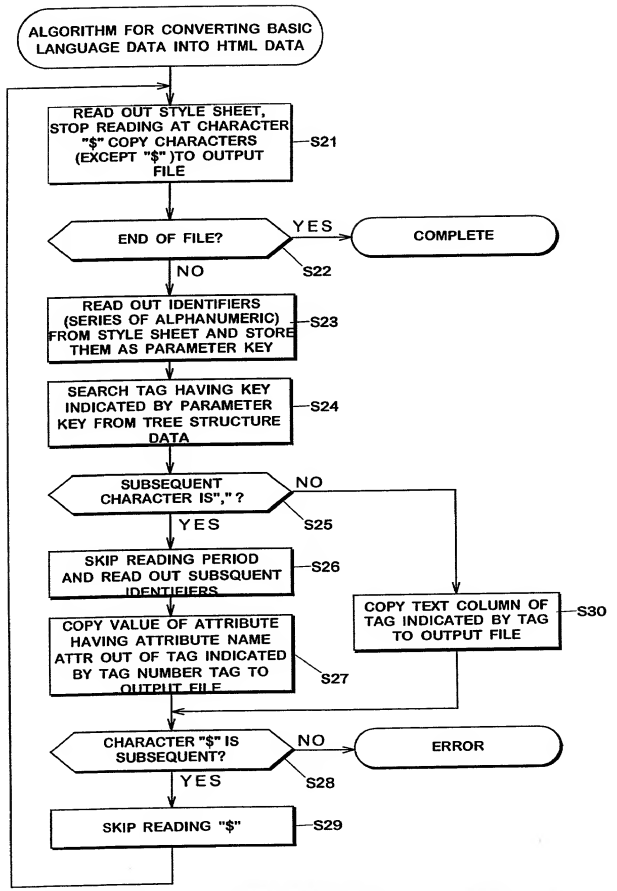
ALGORITHM FOR CONVERTING BASIC LANGUAGE DATA INTO HTML DATA
READ OUT STYLE SHEET, STOP READING AT CHARACTER "$" COPY CHARACTERS (EXCEPT "$")TO OUTPUT FILE
S21
END OF FILE?
YES
COMPLETE
NO
S22
READ OUT IDENTIFIERS (SERIES OF ALPHANUMERIC) FROM STYLE SHEET AND STORE THEM AS PARAMETER KEY
S23
SEARCH TAG HAVING KEY INDICATED BY PARAMETER KEY FROM TREE STRUCTURE DATA
S24
SUBSEQUENT CHARACTER IS"," ?
NO
S25
YES
SKIP READING PERIOD AND READ OUT SUBSQUENT IDENTIFIERS
S26
COPY TEXT COLUMN OF TAG INDICATED BY TAG TO OUTPUT FILE
S30
COPY VALUE OF ATTRIBUTE HAVING ATTRIBUTE NAME ATTR OUT OF TAG INDICATED BY TAG NUMBER TAG TO OUTPUT FILE
S27
CHARACTER "$" IS SUBSEQUENT?
NO
ERROR
S28
YES
SKIP READING "$"
S29

FIG.17

```
<HTML>
<HEAD><TITLE>KSP SAMPLE</TITLE></HEAD>
<BODY BACKGROUND=bg.gif>
SELECT THE MENU <BR>
<IMG SRC=ICOM.JPG>
<A HREF=MAIL.KSP> MAIL</A>
<A HREF=BBS.KSP> BBS</A>
</BODY>
</HTML>
```

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FIG.18

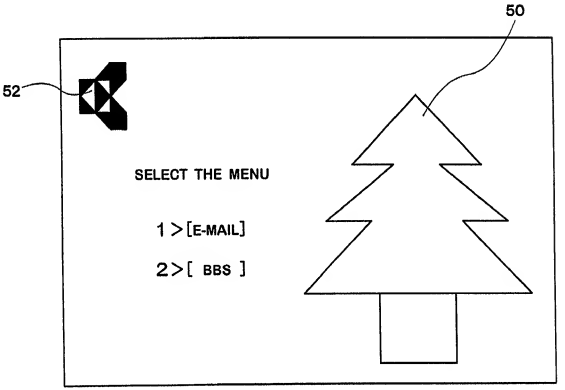

FIG.19A

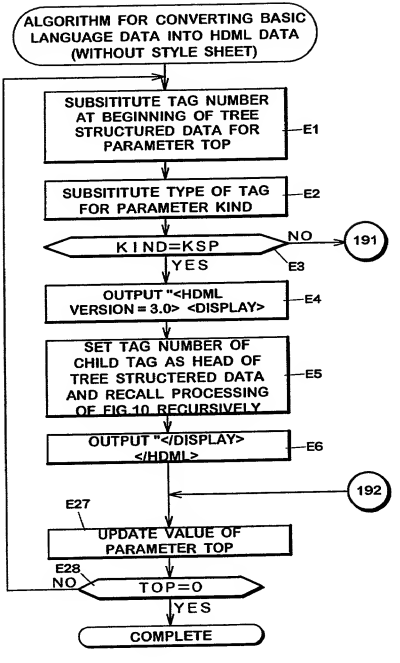
ALGORITHM FOR CONVERTING BASIC LANGUAGE DATA INTO HDML DATA (WITHOUT STYLE SHEET)
SUBSITITUTE TAG NUMBER AT BEGINNING OF TREE STRUCTURED DATA FOR PARAMETER TOP
E1
SUBSITITUTE TYPE OF TAG FOR PARAMETER KIND
E2
KIND=KSP
NO
191
E3
YES
OUTPUT "<HDML VERSION = 3.0> <DISPLAY>
E4
SET TAG NUMBER OF CHILD TAG AS HEAD OF TREE STRUCTERED DATA AND RECALL PROCESSING OF FIG.10 RECURSIVELY
E5
OUTPUT "</DISPLAY> </HDML>
E6
192
E27
UPDATE VALUE OF PARAMETER TOP
E28
NO
TOP=0
YES
COMPLETE

FIG.19B

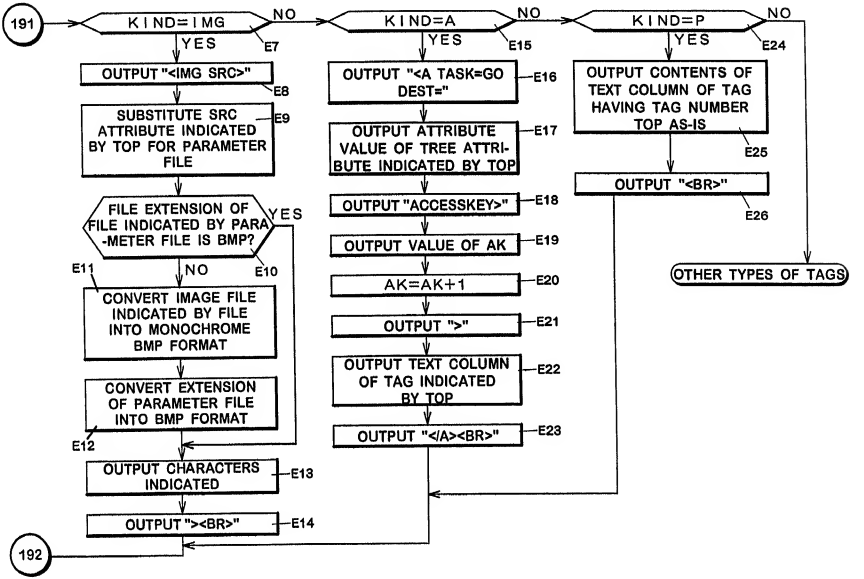
191
KIND=IMG
NO
YES
E7
OUTPUT "<IMG SRC>"
E8
SUBSTITUTE SRC ATTRIBUTE INDICATED BY TOP FOR PARAMETER FILE
E9
FILE EXTENSION OF FILE INDICATED BY PARA-METER FILE IS BMP?
YES
NO
E10
E11
CONVERT IMAGE FILE INDICATED BY FILE INTO MONOCHROME BMP FORMAT
CONVERT EXTENSION OF PARAMETER FILE INTO BMP FORMAT
E12
OUTPUT CHARACTERS INDICATED
E13
OUTPUT ">
"
E14
192
KIND=A
NO
YES
E15
OUTPUT "<A TASK=GO DEST="
E16
OUTPUT ATTRIBUTE VALUE OF TREE ATTRI-BUTE INDICATED BY TOP
E17
OUTPUT "ACCESSKEY>"
E18
OUTPUT VALUE OF AK
E19
AK=AK+1
E20
OUTPUT ">"
E21
OUTPUT TEXT COLUMN OF TAG INDICATED BY TOP
E22
OUTPUT "</A>
"
E23
KIND=P
NO
YES
E24
OUTPUT CONTENTS OF TEXT COLUMN OF TAG HAVING TAG NUMBER TOP AS-IS
E25
OUTPUT "<BR>"
E26
OTHER TYPES OF TAGS

FIG.20

```
<HTML VERSION=3.0>
<DISPLAY>
SELECT THE MENU<BR>
<IMG SRC=ICOM.BMP><BR>
<A TASK=GO DEST=MAIL.KSP ACCESSKEY=1>MAIL </A><BR>
<A TASK=GO DEST=BBS.KSP ACCESSKEY=2>BBS </A><BR>
</DISPLAY>
</HTML>
```

FIG.21

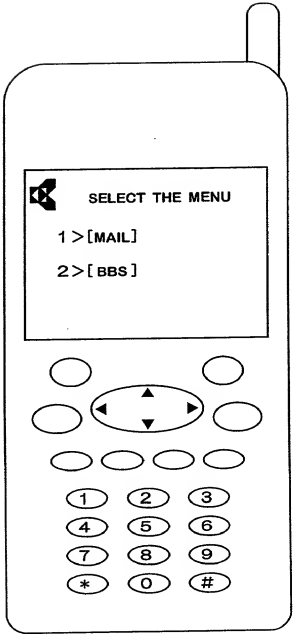

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FIG.22

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FIG.23

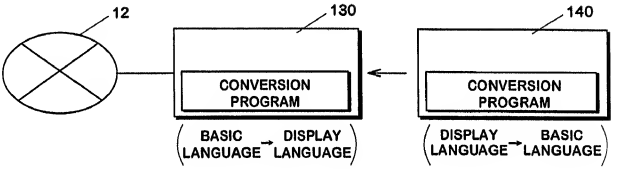

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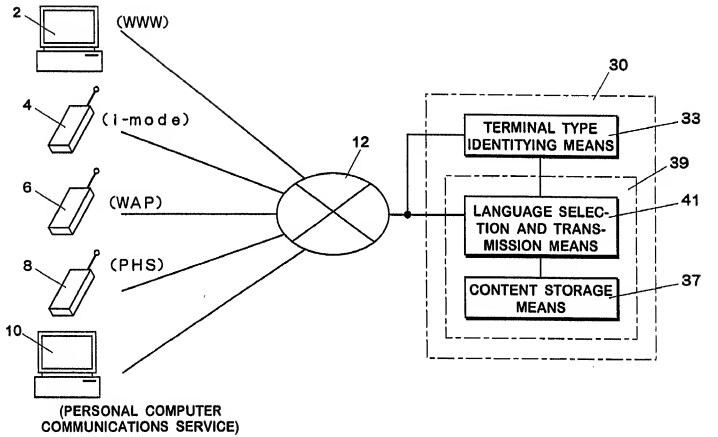
FIG.24



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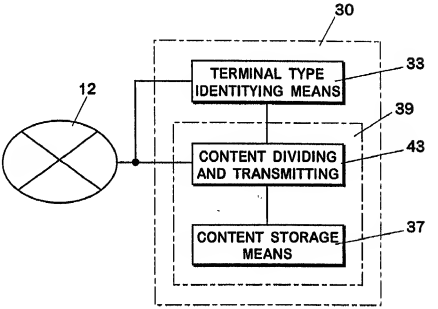
FIG.25